Unidirectional Flushing Program

Last Updated Wednesday, 23 August 2006

Drinking Water Program Fact Sheet

Keeping the Water System Clean: Unidirectional Flushing (UDF)

Q: What is the city doing in my neighborhood, and why do I have dirty water?

A: The city of Boulder is conducting a UDF demonstration project in a section of southwest Boulder beginning the second week of September(weather permitting) and concluding in early November 2006. The area to be flushed during this project is bordered by Baseline Road on the south, Broadway on the east, University Avenue on the north and city of Boulder Open Space on the west. Following the conclusion of the demonstration project, other areas of Boulder are being considered for similar flushing in the near future. Ultimately, development of a unidirectional flushing plan for the entire city is being considered to meet routine water quality maintenance and emergency response needs.

Q: Won’t flushing hydrants also cause problems by “stirring up” the water?

A: While the long-term benefits of systematic flushing are well documented, individual flushing activities may cause temporary disturbances in the the water system. These could include water with sediments or discoloration, or temporary disruption of service.

Q: What can water users do about temporary disturbances that may accompany flushing activities?

A: Running several cold water taps at full force for a short period will usually flush out sediment-laden or discolored water. A general recommendation is to flush cold water for 10 minutes. If the water does not clear up, wait for half an hour before flushing for 10 minutes again. Running water in a garden hose is often an effective way to flush water, as the water can also be used on landscaping. If the water hasn’t cleared at this point, contact the city’s Drinking Water Program at 303-413-7400 for further assistence.

PLEASE NOTE: It is recommended that laundry is not done while discoloration is evident in the water. It is also best not to use hot water until the water has cleared to avoid drawing sediment into the hot water heater.

Q: Is it OK to drink sediment-laden or discolored water during temporary disturbance events?

A: It is recommended that water users wait until the water has cleared before drinking.

Q: What are the benefits of a flushing program?

A: The development and implementation of a UDF program in Boulder can improve both water quality and hydraulics by reducing bacterial regrowth, removing sediments and deposits, controlling corrosion, restoring flows and pressures, eliminating taste and odor problems, and reducing disinfectant demand throughout the system. This also prolongs the life expectancy of the distribution system and reduces the potential for a waterborne disease outbreak in Boulder. Having a UDF plan also provides capability for rapid and effective removal of potentially harmful water if a contamination event were to be detected in the city’s drinking water system. This could represent a key component for emergency response to potential accidental or willful contamination of the city’s potable water system.

Q: How is UDF related to hydrant testing by the fire department?

A: The Boulder Fire Department also conducts routine “flow testing” of fire hydrants, an important effort toward assuring hydrant effectiveness. Such testing is a separate city effort, independent from any UDF efforts.

Q: Why does the water system need to be routinely flushed?

A: The city’s treated water distribution system is a complex network of pipes and storage reservoirs where sediment or deposits may naturally accumulate over time. If not removed, these materials may cause water quality deterioriation, taste and odor problems or discoloration of the water. Water may also stagnate in less-used parts of the distribution system, which can result in degraded water quality. The normal flow of water through the system will reduce some, but not all of these accumulation and stagnation problems over time. Systematic flushing of fire hydrants is an effective way to accomplish this cleaning.

Q: What is unidirectional flushing and how is it done?

A: Unidirectional flushing (UDF) involves a systematic and sequential flushing of hydrants so that water is moved in one direction, out of the system. A UDF plan identifies discrete sections of the system to be flushed independently, in a coordinated manner, starting at points closest to the water treatment plant or related finished water reservoirs, and moving down through the system.

Q: Is systematic flushing of distribution systems something “new” or is this a common water utility practice?

A: The procedure is considered a best management practice for distribution system water quality protection and maintenance and is commonly used by municipalities nation-wide. Many communities throughout the country have implemented successful UDF programs. This is the second-year for the UDF program in Boulder. In June of 2006, the Utilities Division completed the third run of the UDF program in southwest Boulder with very little, if any, disturbance to the water system.